

REMARKS

As a preliminary matter, the drawings and specification are amended to describe FIGs. 1-4A and 4B as prior art, as suggested by the Examiner. For this reason, withdrawal of the objection to the drawings and specification is respectfully requested.

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi (U.S. Patent No. 6,046,874) in view of Honma (U.S. Patent No. 6,111,835). Applicants traverse the rejection because the cited references fail to disclose or suggest each of a plurality of detectors of a Viterbi detection unit providing a partial response signal with a constraint length from a sequence of samples derived from a readout signal.

Takahashi teaches a reproduction apparatus in which the two equalizers (PR4 equalizer 30 and EPR4 equalizer 32) are provided and switched by a selector to the equalizer in which an error rate is reduced and an equalization is executed. However, only one decoder with the maximum likelihood detection unit is provided. There is no teaching or suggestion in Takahashi of having each of a plurality of detectors of a Viterbi detection unit providing a partial response signal with a constraint length from a sequence of samples derived from a readout signal, as in the present invention.

Honma teaches a PRML (partial response maximum likelihood) decoder in which the connection of the ACS circuits and the path memories is changed to produce selectively one of a first path select signal and a second path select signal. However, no teaching or suggestion in Honma is provided of each of a plurality of detectors of a Viterbi

detection unit providing a partial response signal with a constraint length from a sequence of samples derived from a readout signal, as in the present invention.

In contrast, the data reproduction apparatus of the present invention includes a Viterbi detection unit having a plurality of detectors each providing a first partial response signal with a first constraint length from a first sequence of samples derived from a first readout signal, and a connection unit. The connection unit selects one of connection and disconnection of the plurality of detectors in the Viterbi detection unit in response to a timing signal, wherein, when the connection of the plurality of detectors is selected by the connection unit, the Viterbi detection unit provides a second partial response signal with a second constraint length from a second sequence of samples derived from a second readout signal. The second constraint length is different from the first constraint length.

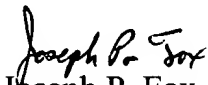
More specifically, as disclosed at page 3, lines 8-14, and page 12, lines 8-18, of Applicants' specification, when the dual-mode configuration of the PRML scheme is selected (FIG. 7A), the first Viterbi detector 50 and the second Viterbi detector 52 in the Viterbi detection unit 150 separately provide a partial response signal with a small constraint length. Since both Takahashi and Honma fail to disclose or suggest that the first Viterbi detector and second Viterbi detector separately provide a partial response with a small constraint length, withdrawal of the §103 rejection is respectfully requested.

For all of the foregoing reasons, Applicants submit that this Application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

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FIG.1

Prior Art

(a) DATA FORMAT

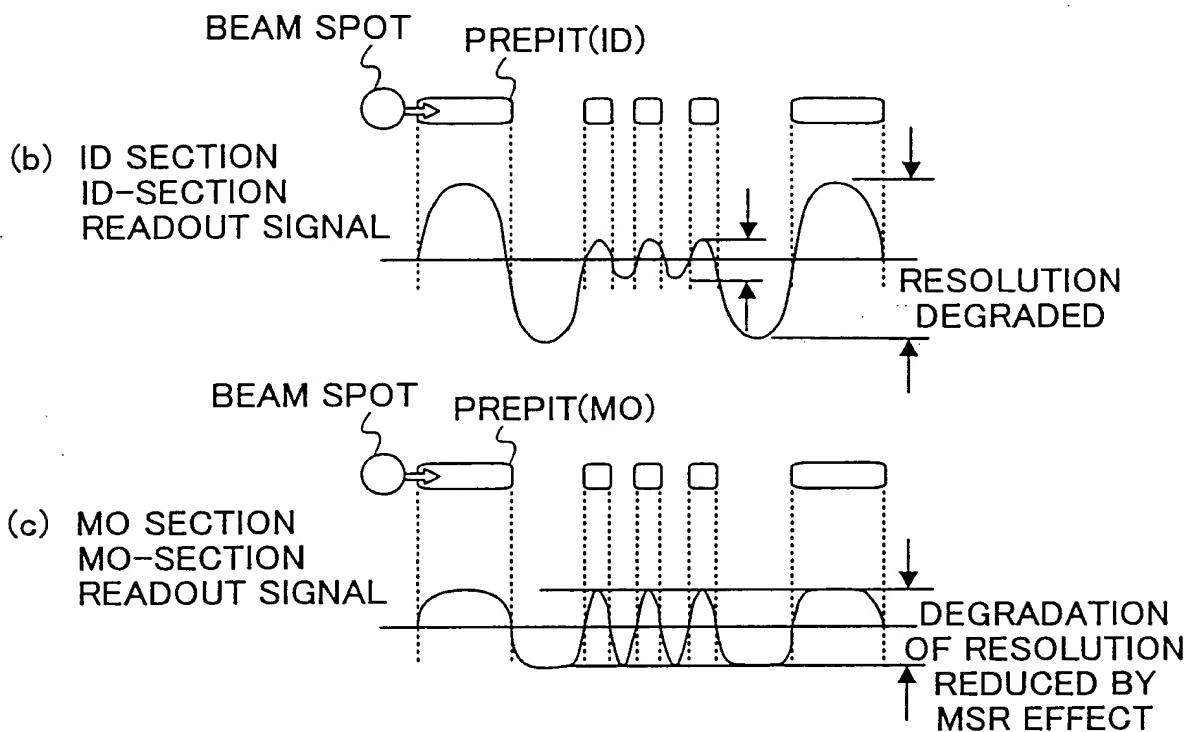
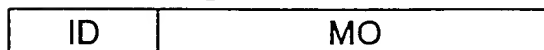




FIG.2

Prior Art

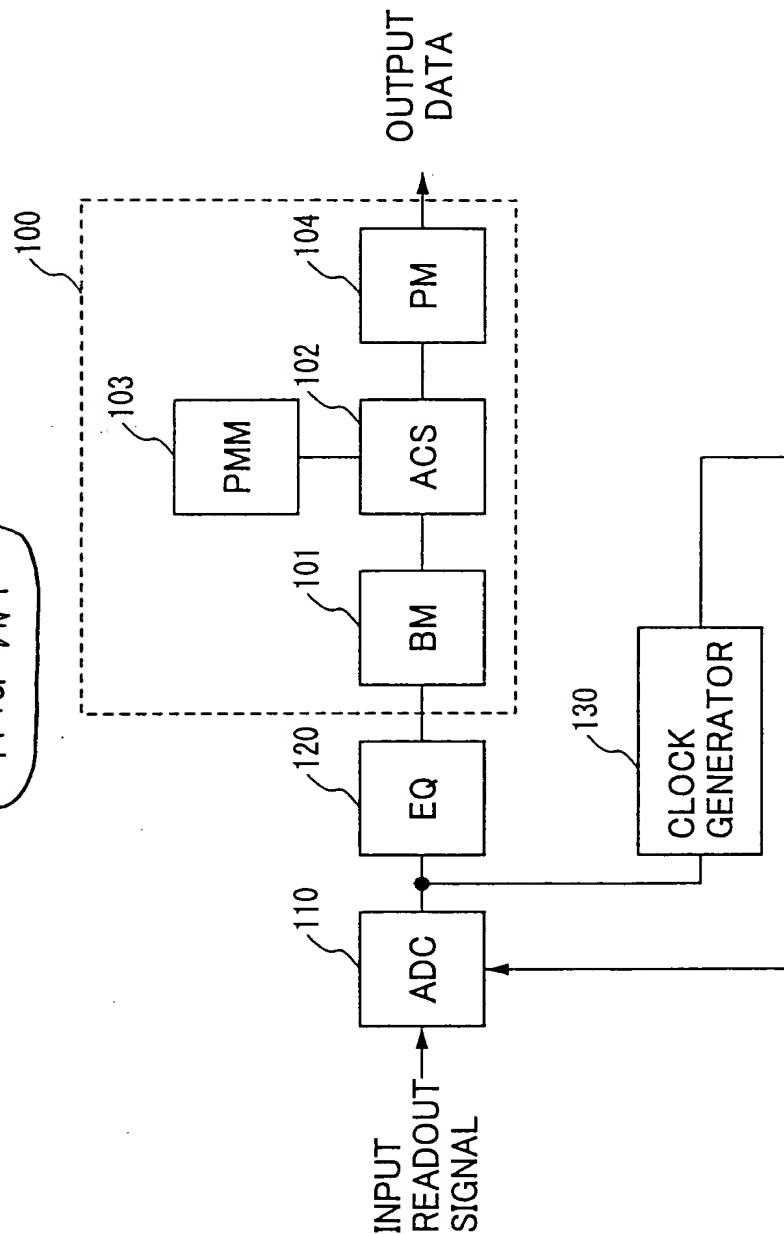




FIG. 3

Prior Art

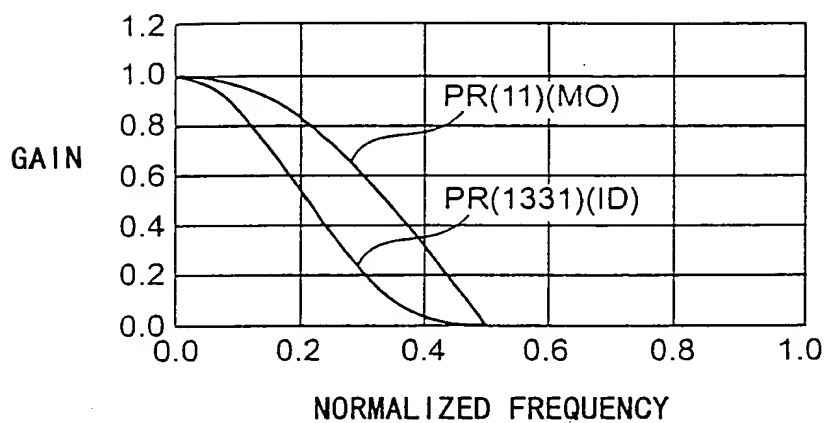
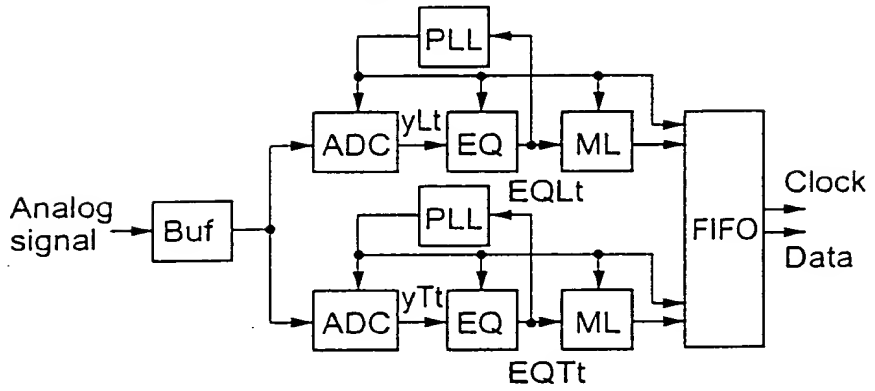




FIG. 4A

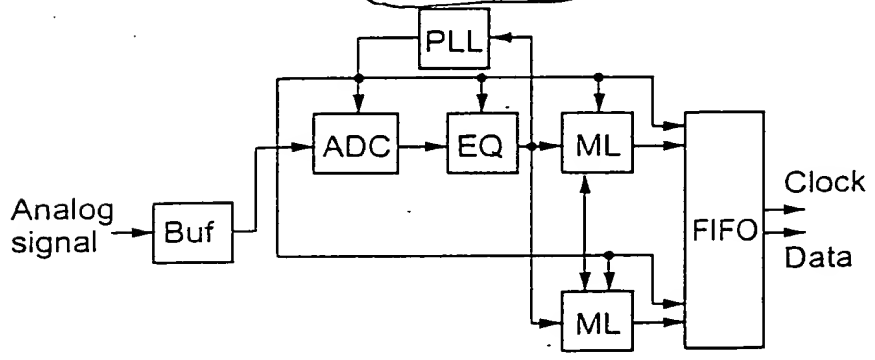
Prior Art



DUAL-MODE CONFIGURATION

FIG. 4B

Prior Art



SINGLE-MODE CONFIGURATION